WHAT IS CLAIMED IS:

1. An adenoviral vector that is deficient in two or more adenoviral gene functions.

2. The adenoviral vector of claim 1, wherein at least one of the said two or more gene functions is selected from the group of gene functions comprising the E1, E2, E3 and E4 regions of the adenoviral genome.

3. The adenoviral vector of claim 1, wherein at least one of the said two or more gene functions is selected from the group of gene functions comprising the late regions of the adenoviral genome.

4. The adenoviral vector of claim 2, wherein at least one of the said two or more gene functions is selected from the group of gene functions comprising the late regions of the adenoviral genome.

5. The adenoviral vector of claim 1, wherein the said two or more adenoviral gene functions is all the adenoviral gene functions.

6. The adenoviral vector of claim 5, wherein said adenoviral vector comprises adenoviral inverted terminal repeats and one or more adenoviral promoters.

7. The adenoviral vector of claim 5, wherein said adenoviral vector comprises adenoviral inverted terminal repeats and a packaging signal.

8. The adenoviral vector of claim 1, wherein said adenoviral vector only functions in a complementing cell line.

9. The adenoviral vector of claim 8, wherein said adenoviral vector only functions in a complementing cell line as a result of the modification of adnøviral inverted terminal repeats or packaging signal.

10. A cell line that complements an adenoviral vector of claim 1.

11. A cell line that complements an adenoviral vector of claim 2.

12. A cell line that complements an adenoviral vector of claim 3.

13. A cell line that complements an adenoviral vector of claim 4.

14. A cell line that complements an adenoviral vector of claim 5.

15. A cell line that complements an adenoviral vector of claim 6.

16. A cell line that complements an adenoviral vector of claim 7.

17. A cell line that complements an adenoviral vector of claim 8.

18. A cell line that complements an adenoviral vector of claim 9.

19. A cell line selected from the group consisting of those cell lines designated as 293/E4, 293/ORF-6, and 293/E4/E2A.

20. A recombinant multiply deficient adenoviral vector of claim 1 comprising a foreign gene.

21. The recombinant vector of claim 20, wherein said foreign gene is the cystic fibrosis transmembrane regulator gene.

22. The recombinant vector of claim 20, wherein said recombinant vector is selected from the group consisting of $Ad_{GV}.10$, $Ad_{GV}.11$, $Ad_{GV}.12$, and $Ad_{GV}.13$.

23. The recombinant vector of claim 22, wherein said recombinant vector is selected from the group consisting of $Ad_{GV}CFTR.10$, $Ad_{GV}CFTR.11$, $Ad_{GV}CFTR.12$, and $Ad_{GV}CFTR.13$.

24. A recombinant multiply deficient adenoviral vector of claim 1 comprising a DNA sequence capable of expressing in a mammal a therapeutic agent.

25. The recombinant multiply deficient adenoviral vector of claim 24, wherein said therapeutic agent is an antisense molecule selected from the group consisting of mRNA and a synthetic oligonucleotide.

26. A recombinant multiply deficient adenoviral vector of claim 1 comprising a DNA sequence capable of expressing in a mammal a polypeptide capable of eliciting an immune response to said polypeptide.

27. A method of gene therapy comprising the administration to a patient in need of gene therapy a therapeutically effective amount of a recombinant multiply deficient adenoviral vector of claim 20.

28. A method of gene therapy comprising the administration to a patient in need of gene therapy a therapeutically effective amount of a recombinant multiply deficient adenoviral vector of claim 21.

29. A method of gene therapy comprising the administration to a patient in need of gene therapy a therapeutically effective amount of a recombinant multiply deficient adenoviral vector of claim 22.

30. A method of gene therapy comprising the administration to a patient in need of gene therapy a therapeutically effective amount of a recombinant multiply deficient adenoviral vector of claim 23.

31. The method of claim 28, wherein the recombinant multiply deficient adenoviral vector is administered to the lungs of said patient.

32. The method of claim 30, wherein the recombinant multiply deficient adenoviral vector is administered to the lungs of said patient.

33. A method of therapy comprising the administration to a patient in need of therapy a therapeutically effective amount of a recombinant multiply deficient adenoviral vector of claim 1 comprising a DNA sequence capable of expressing a therapeutic agent.

34. The method of claim 33, wherein said therapeutic agent is an antisense molecule selected from the group consisting of mRNA and a synthetic oligonucleotide.

35. A method of vaccination comprising the administration to a patient in need of vaccination an immunity-inducing effective amount of a recombinant multiply deficient adenoviral vector of claim 1 comprising a DNA sequence capable of expressing a polypeptide capable of eliciting an immune response to said polypeptide.